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## **MEMORANDUM**

**DATE:** April 20, 2017  
**TO:** McMinnville Planning Commission  
**FROM:** Ron Pomeroy, Principal Planner  
**SUBJECT:** Draft Amendments to Street Grade Standards

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### **Report in Brief:**

The purpose of this discussion item is to review draft amendments to the McMinnville Zoning Ordinance (Ordinance 3380) specific to Section 17.53.101(L) (Land Division Standards – Grades and Curves) to allow local street grades up to and including fifteen (15) percent.

### **Background:**

The maximum street grade allowed for construction of local streets (non arterial and non collector streets) is currently limited by the McMinnville Zoning Ordinance to a grade not to exceed 12 (twelve) percent. While the Planning Commission is provided the ability to approve steeper grades where existing conditions, particularly topography, make it otherwise impractical to create buildable lots, this action requires approval of a Variance or Planned Development application and is somewhat costly for the applicant in time and treasury.

In recent years, local development has encountered challenges to subdivision design (e.g., street grade, street orientation, lot configuration) in the McMinnville West Hills area due to the existence of numerous steep slopes and associated ravines traversing the hillside often at discordant angles. As urban development continues to move into more geographically challenging areas, increasing the allowable street grade for local streets may help to further efficient development supportive of greater densities and help provide additional residential housing opportunities for area residents.

### **Discussion:**

In recent years, the Planning Department has had discussions with area developers regarding the difficulties of engineering residential subdivisions given, in part, the steeper slopes and other topographic challenges found on some land near McMinnville's urban edge. One of the main concerns is the current limitation of local street grades being held to a maximum of a 12 (twelve) percent.

To proactively engage toward a solution for this local development challenge, the McMinnville Planning Department recently entered into discussions regarding the adoption of a steep streets standard with the McMinnville Engineering Department and Fire Department, as well as the City of Tigard Engineering Department as they have been approving construction of streets on steeper slopes in their jurisdiction for many years. Through these discussions, and some informal positive vetting with a local developer currently challenged with this limitation, staff is proposing amendments to a specific element of the Land Division Standards chapter of the McMinnville Zoning Ordinance. The proposed amendments address three areas: 1) street grade; 2) length of the steep street section; and, 3) residential fire suppression and are summarized below.

### 1) Street Grade

The City of Tigard has years of experience in allowing steep street residential development in numerous hillside areas; perhaps most notably in the Bull Mountain area located near the City's southern edge and west of Highway 99W. McMinnville Planning staff contacted the Tigard Engineering Department and discusses their City's allowance for the development of steeper streets. They indicated that some streets with up to an 18 percent grade have been locally permitted although this circumstance is not desirable from the engineering or fire safety perspective and not common. Rather, construction of local residential streets with grades up to 15 percent are permitted as a city standard as found in Tigard's development ordinance (Section 18.810.030(N)).

McMinnville Planning staff shared this information with the McMinnville Fire Department and found a commonality in that the McMinnville Fire Department also allows for street grades of up to 15 percent for construction in rural areas. There are also other provisions that apply to the often uneven and gravel based rural roads that are not applicable to paved streets constructed to urban standards located within the city limits. The McMinnville Fire Department concurs with and supports an amendment to allow local residential streets to be constructed with grades up to and including 15 percent with provisions noted below.

The Planning Department also recently discussed the possibility of this amendment with a developer currently facing this type of design challenge. In those discussions the developer, and their associated engineers, voiced great support for adoption of an amendment to increase the local residential street grade limitation from 12 (twelve) to 15 (fifteen) percent. Such an amendment would allow for additional flexibility in the design of the local street network and may result in the creation of additional residential building lots rather than the result of potentially oversized lots due to accessibility constraints.

### 2) Length of Steep Street Section

In considering adoption a standard to allow local streets of steeper grades, consideration of the practical movement and operation of Fire Department apparatus along those grades is critical. Increased grades place additional strain on the heavier Fire Department vehicles and can have the effect of decreasing speed of reaching their emergency destination. Shorter lengths of steeper grades can be more easily accommodated by these vehicles as the flatter intersections or sections of shallower grade act as "refuges" allowing the heavier vehicles to regain momentum. In rural areas, the McMinnville Fire Department allows street lengths with grades of 15 (fifteen) percent to be no more than 200 feet in length to help mitigate the grade effect on speed described above. In urban areas, it is recommended that the 200 foot maximum length for street lengths with grades of 15 (fifteen) percent also be adopted. This maximum street section length exhibiting an increased grade is based on Fire Department operational constraints. In particular, operation of the fire engine's pumps while the engine is parked on

grades exceeding 12 percent can cause increased load on the pumps potentially leading to equipment failure. Additionally, having “refuges” of shallower street grade spaced no more than 200 feet apart allows an operationally safer angle on which to park the engine and operate the pumping system. As seen in the recommended code amendments below, these “refuges” would be a minimum of 75-feet in length and may often be found to occur at street intersections which are already locally constructed to national recommended Public Rights-of-Way Accessibility Guidelines (PROWAG) allowing a maximum 5 percent slope. This also allows the Fire Department to pull hoses feet in any direction to reach all properties.

### 3) Residential Fire Suppression

For residences where access would be provided by streets with grades exceeding the City’s historic standard of 12 (twelve) percent, additional street design standards and fire safety measures are recommended. This is to help provide an extra measure of safety not only for the individual residence that may be at risk, but also for additional adjacent or nearby residences that could easily be affected should there be an occurrence of a large residential fire. In response to that concern, it is recommended not only by the McMinnville Fire Department and the McMinnville Building Official, but is also becoming an industry standard, that residences that can only be reasonably reached by travel along a street with a grade exceeding 12 (twelve) percent must be provided with a residential fire suppression sprinkler system prior to the issuance of the final occupancy for the residence.

#### **Recommended Amendments:**

The amendments being proposed are as follows. Text to be deleted is identified with a ~~strikeout~~ font and text to be added is identified with a **bold underlined** font.

McMinnville Zoning Ordinance (Ordinance 3380)  
“Chapter 17.53.101 (Streets) – (L) Grades and curves.

Grades shall not exceed six (6) percent on arterials, 10 (ten) percent on collector streets, or 12 (twelve) percent on any other street **except as described below. Any local street grade exceeding 12 (twelve) percent shall be reviewed for approval by the Fire Code Official during the land use application review process. When a local residential street is approved to exceed 12 (twelve) percent the following shall be required:**

- 1. A maximum of 200 feet of roadway length may be allowed with a grade between 12 (twelve) percent and 15 (fifteen) percent for any one section. The roadway grade must reduce to no more than 12 (twelve) percent for a minimum of 75 linear feet of roadway length between each such section for firefighting operations.**
- 2. Fire sprinklers shall be installed in all residential and commercial structures whose access road is constructed at a grade higher than 12 (twelve) percent. The approval of such fire sprinklers shall be accomplished in accordance with the provisions of ORS 455.610(6).**

Centerline radii of curves shall not be less than 300 feet on major arterials, 200 feet on secondary arterials, or 100 feet on other streets, and shall be to an even 10 (ten) feet. Where existing conditions, particularly topography, make it otherwise impractical to provide buildable lots, the Planning Commission may accept ~~steeper grades and~~ sharper curves”

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**Fiscal Impact:**

None

**Recommendation:**

Staff contends that this amendment would be beneficial to future residential development as it would allow for additional creative solutions to challenging topography and aid in the possible achievement of additional residential density. No specific motion is required, but the Planning Commission may provide guidance to staff in drafting the final zoning text amendments which are proposed to be presented during a public hearing at the next regular Planning Commission meeting on May 18, 2017.

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